WHAT IS CLAIMED IS:

1. A method for using a machine to predict a value of an attribute, having no assigned value, of an active entity, the method comprising:

a) accepting, with the machine, values of attributes of a number of other entities;

b) generating, with the machine, for each of the other entities, a probability that the active entity's true personality type is that of the current other entity;

c) determining, with the machine, for each possible value of the attribute having no assigned value, a probability that the active entity values the attribute with the current possible value based, at least in part, on the probabilities that the active entity has a true personality type which is the same as that of the other entities as generated in act (b); and

d) selecting, with the machine, from among the possible values of the attribute having no assigned value, the possible value with the maximum probability determined in act (c) to generate a predicted value.

2. The method of claim 1 wherein the active entity is a person, each of the other entities is a person, each of the attributes is an item, and each of the values is an item rating.

3. The method of claim 1 wherein the active entity is a person, each of the other entities is a person, each of the attributes is an item selected from a group of items

4   consisting of (a) textual content, (b) video content, (c)
5   audio content, (d) image content, (e) multi-media content,
6· (f) a service, (g) a consumer good, (h) a business good,
7   (i) clothing, and (j) a financial instrument, and each of
8· the values is an item rating.

1   4. The method of claim 1 wherein the act of generating,
2   for each of the other entities, a probability that the
3   active entity's true personality type is that of the
4   current other entity includes determining, with the
5   machine, for each of the attributes, a probability that the
6   active entity will truly value the attribute with the same
7   value as the current other entity given the active entity's
8   values of other attributes.

1   5. The method of claim 1 wherein the act of generating,
2   for each of the other entities, a probability that the
3   active entity's true personality type is that of the
4   current other entity is based on
5   i) for each attribute, a probability that the
6   active entity values the attribute given that the
7   active entity's true value of the attribute is
8   the same as that of the current other entity, and
9   ii) a probability that the active entity's true
10   personality type is that of the current other
11   entity.

1   6. The method of claim 5 wherein the act of determining,
2   for each attribute, a probability that the active entity
3   values the attribute given that the active entity's true
4   value of the attribute is the same as that of the current
5   other entity is done in accordance with the expression:

6

7
$$e^{-(x-y)^2/2\sigma^2} \; ,$$

8

9 where x is the active entity's value of the attribute, y is

10 the current other entity's value of the attribute, and σ is

11 a user definable parameter.

1 7.   The method of claim 5 wherein, in the act of

2 determining a probability that the active entity's true

3 personality type is that of the current other entity

4 includes setting, with the machine, the probability that

5 the active entity's true personality type is that of the

6 current other entity is set to 1/n, where n is the number

7 of other entities.

1 8.   The method of claim 1 wherein the act of determining,

2 for each possible value of the attribute having no assigned

3 value, a probability that the active entity values the

4 attribute with the current possible value is based on

5   i)   for each personality type, a probability that

6   the active entity values the current unknown

7   attribute with the current value given that the

8   active ~~user~~ *entity* is of the current personality type,

9   and

10   ii)   a probability that the active user is of the

11   current personality type.

1 9.   The method of claim 8 wherein, in the act of

2 determining a probability that the active entity's true

3 personality type is that of the current other entity

4 includes setting, with the machine, the probability that

5   the active entity's true personality type is that of the

6   current other entity is set to 1/n, where n is the number

7   of other entities.

1 10 The method of claim 1 further comprising:

2   e) soliciting values of attributes from the active

3   entity.

1 11. The method of claim 10 further comprising:

2   f) estimating an expected value, to the attribute

3   value prediction, of having a value of an attribute,

4   wherein the act of soliciting values of attributes

5   from the active entity is controlled by function of

6   the expected value estimated and a cost function of

7   soliciting the value of the attribute from the active

8   entity.

1 12. The method of claim 1 further comprising:

2   e) estimating an expected value, to the attribute

3   value prediction, of having a value of an attribute,

4   wherein the act of generating, with the machine, for

5   each of the other entities, a probability that the

6   active entity's true personality type is that of the

7   current other entity considers an incomplete set of

8   all attributes, wherein the members of the incomplete

9   set of all attributes are selected based on a function

10   of the expected value estimated and a cost function of

11   including the value of the attribute in the incomplete

12   set.

1 13. A method for using a machine to generate, for each of

2   a number of personality types defined by a plurality of

3   other entities, probabilities that an active entity is that

4   personality type, the method comprising:

5   a)   accepting, with the machine, values of attributes

6   associated with a number of other entities; and

7   b)   for each of the other entities,

8   i)   determining, with the machine, for each

9   attribute, a probability that the active entity

10   values the attribute given that the active

11   entity's true value of the attribute is the same

12   as that of the current other entity, and

13   ii)   determining, with the machine, a probability

14   that the active entity's true personality type is

15   that of the current other entity.

1   14.   The method of claim 13 wherein the act of determining,

2   for each attribute, a probability that the active entity

3   values the attribute given that the active entity's true

4   value of the attribute is the same as that of the current

5   other entity is done in accordance with the expression:

6

7                           $$e^{-(x-y)^2/2\sigma^2}\,,$$

8

9   where x is the active entity's value of the attribute, y is

10   the current other entity's value of the attribute, and σ is

11   a user definable parameter.

1   15.   The method of claim 13 wherein the act of determining

2   a probability that the active entity's true personality

3   type is that of the current other entity includes setting,

4   with the machine, the probability that the active entity's

5   true personality type is that of the current other entity

6   to 1/n, where n is the number of other entities.

1   16.   A method for using a machine to determine, for each

2   possible value of an attribute having no assigned value, a

3   probability that an active entity values the attribute with

4   the current possible value, the method comprising:

5   a)   accepting, with the machine, for each of a number

6   of personality types, a probability that the active

7   user is of the current personality type;

8   b)   determining, with the machine, a probability that

9   the active entity values the attribute with the

10   current possible value based on

11   i)   for each personality type, a probability that

12   the active entity values the current unknown

13   attribute with the current value given that the

14   active user is of the current personality type,

15   and

16   ii)   a probability that the active user is of the

17   current personality type.

1   17.   The method of claim 16 wherein the probability that

2   the active entity's true personality type is that of the

3   current other entity is set to the probability that the

4   active entity's true personality type is that of the

5   current other entity to 1/n, where n is the number of other

6   entities.

1   18.   A machine readable medium having instructions which,

2   when executed by a machine, effect the method of claim 1.

1   19.   A machine readable medium having instructions which,

2   when executed by a machine, effect the method of claim 13.

1   20.   A machine readable medium having instructions which,

2   when executed by a machine, effect the method of claim 16.

1   21.   An apparatus for predicting the value of an attribute

2   of an active entity, the apparatus comprising:

3   a)   a personality type generator for generating, for

4   each of a plurality of personality types, a

5   probability that the active entity is of the current

6   personality type; and

7   b)   an attribute value predictor for predicting the

8   value of the attribute of the active entity based on

9   the each of the probabilities that the active entity

10   is of each of the personality types.

1   22.   The apparatus of claim 21 wherein the personality type

2   generator has access to values of attributes of each of a

3   plurality of other entities.

1   23   The apparatus of claim 21 further comprising:

2   c)   means for soliciting values of attributes from the

3   active entity.

1   24.   The apparatus of claim 23 further comprising:

2   d)   means for estimating an expected value to the

3   attribute value predictor of having a value of an

4   attribute, wherein the means for soliciting values of

5   attributes from the active entity are controlled by

6   function of the expected value estimated and a cost

7   function of soliciting the value of the attribute from
8   the active entity.